

REMARKS

The reopening of the prosecution in view of Applicant's appeal brief filed on February 13, 2009, is acknowledged. The Examiner sets forth a new ground of rejection and invites a reply to the action. Accordingly, upon further review of the application and review of the objections and rejections of the claims, Applicant amends Claims 15-17, 24 and 25 to more clearly define the invention. These are the only claims that are pending in this application.

The Examiner objects to the form of Claims 15, 24 and 25 under 37 C.F.R. 175(i) on the basis that each element or step must be separated by a line indentation. Accordingly, this amendment recasts the format of the claims to comply with the Rules, and it is respectfully submitted that the format overcomes the objection. So, it is submitted that this objection should be withdrawn.

The Examiner rejects Claims 15-17 and 24 under 35 U.S.C. 103(a) as being unpatentable over Lemchen (US 5,890,893) in view of Muller (US 3,345,745) on the basis that it would be obvious to a person of ordinary skill in the art to provide the bracket in Lemchen with a peripheral lip to embed the bonding base 10b of Lemchen to more securely attach the bracket and body 10a to the base in view of the teaching of Muller. It is respectfully submitted that this proposed combination of Lemchen and Muller is improper and untenable.

It is submitted that the Examiner misreads the Lemchen patent and the structure of the dental bracket disclosed in Lemchen. The Examiner in referring to Lemchen correctly states that the polymer resin bonding base 10b of Lemchen is light-curable. However, that is not relevant to the claimed orthodontic appliance in the present application which includes the

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element “a light-permeable, heat or light-cured polymer resin bonding base molded onto the lingual side of the body. . . .” The Lemchen bracket which includes the partially cured polymeric base 10b (Col. 6, lines 6-7) is provided so that the base is moldable and curable during the mounting of a bracket on a tooth which additionally requires the application of an activatable adhesive applied to either or both of the surface of the base and the surface of the tooth (Col. 2, lines 45-52). As the Examiner concedes, the base 10b in Lemchen does not include an integral peripheral lip embedding the bracket body. It is because of the absence of this feature that the Examiner relies on Muller to assertedly provide such a teaching.

The combining of Muller to Lemchen requires that the partially cured base 10b in Lemchen be cured, which then requires a reconstruction of Lemchen such that it no longer satisfies the purpose of Lemchen in having a partially cured moldable base for conforming to the contour of a tooth. For this reason alone, the combining of Muller with Lemchen is improper and the result of hindsight after viewing Applicant’s invention.

Moreover, the Examiner does not define the appliance body in Lemchen. Indeed, the appliance body of Lemchen identified as 10a appears to be mounted on a plate 10d (Fig. 2a) although in Col. 6, lines 5-6, the legend 10d is defined as a mesh-like surface. The Lemchen disclosure is not clear as to what constitutes 10d after looking at Fig. 2a and comparing it to Fig. 2b wherein the lead lines of 10b go to different elements.

Moreover, the Examiner does not indicate where the full peripheral lip would be located on the appliance body of Lemchen. Wherever it is located would require impermissible reconstruction of the appliance in Lemchen.

It is further noted that mounting of the appliance in Lemchen on a tooth requires precoating of the appliance or the tooth with a thin layer of liquid adhesive 10c. The type of adhesive is not identified. What is identified is that the partially cured base will be light-cured once it is molded to the surface of a tooth.

The Examiner merely refers to Muller as teaching a peripheral lip formed on the bracket base and relies on Figs 11 and 12 as well as explanation in Col. 4.

First, Muller is deficient inasmuch as pointed out in the appeal brief, it antedates the development of light-cure adhesive. Second, Muller discloses a structure that is not made at the factory but is made at the chair of the patient. Further, Muller does not teach or show an orthodontic appliance having a buccal/labial archwire receiving side as called for in the claims. Indeed, Muller is a product of attaching orthopedic devices for the treatment of the jaw and provides a rigid fastening element that may be called an attachment or bracket when attached to a single tooth. But most important, Muller does not use any light-cure adhesive and employs a plunger system with a plunger 20 that coacts with an external plunger 21 to form the plug or plastic portion of the attachment.

The device of Muller was conceived to overcome the disadvantages of attaching teeth to metal bands that require separation of adjacent teeth by preforming the bands to the configuration of a tooth, thereby reducing the risk of caries caused by food residue retention as well as the unsightliness of bands. On the other hand, Applicant's invention solves a bonding problem when using light-cure adhesive to enhance the bonding of a bracket to a tooth. Thus, Muller teaches away from Applicant's invention when relying on the use of plungers 20 and 21, a foil 23 and 24, and an adhesive 18 to mount a bracket on a tooth.

The claims have been amended to set forth that the light-permeable base enhances the use of and curing of a light-cure adhesive by allowing the curing light to penetrate beneath the appliance when bonding the appliance to a tooth, thereby substantially increasing the bond strength of an appliance on a tooth. This is not taught in Lemchen or Muller or any other prior art of record.

Accordingly, it is submitted that Claims 15-17 and 24 are not obvious over Lemchen and Muller as applied by the Examiner, and allowance of these claims should be granted.

The Examiner rejects Claim 25 under 35 U.S.C. 103(a) as being unpatentable over Lemchen in view of Muller and further in view of Kesling (US 5,263,859), and asserts that it would be obvious to one of ordinary skill in the art to further modify the appliance taught by Lemchen and Muller to have the opening of Kesling for supporting auxiliaries.

Additionally, Claim 25 defines the integral peripheral lip of the base of assuring the base to be properly bonded to the appliance body to withstand forces applied to the body by an archwire during use by a patient. That feature is not taught or suggested in Lemchen or Muller.


For reasons given above to the inapplicability of Lemchen and Muller, it is respectfully submitted that Claim 25 is not obvious in view of Lemchen, Muller and Kesling. As generally conceded by the Examiner, Kesling does not teach the basic combination of elements asserted in Lemchen and Muller but only relates to providing an opening through supported auxiliaries. It is therefore submitted that Claim 25 is not obvious in view of Lemchen, Muller and Kesling, and allowance of this claim should be granted.

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In view of the foregoing, it is submitted that the teachings of the references applied in fact teach away from the present invention. They do not teach an appliance made at a factory having the feature of a base enhancing the use of light-cure adhesive to provide improved bonding strength and to enhance the connection of the base to the appliance body. Further, it is submitted that Lemchen and Muller, in whichever order, are not capable of being physically combined such that that combination would work for the intended purpose of the present invention. The non-obviousness of the present invention is especially strong where the prior art teachings undermine the very reasons for the present invention and any conclusion that a skilled artisan would have combined the teachings of the references. Thus, the Examiner violates the test of KSR International Co. v. Teleflex, Inc., 127 S.Ct. 1727 (2007).

An earnest endeavor has been made to place this application in condition for formal allowance, and in the absence of more pertinent prior art, such action is courteously solicited.

Respectfully submitted,



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September 1, 2009

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